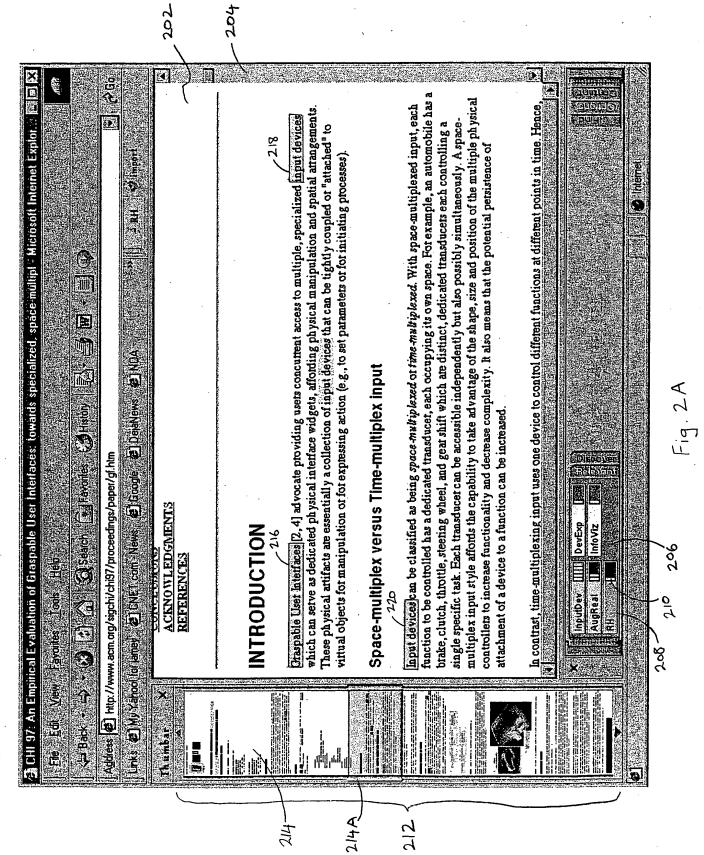
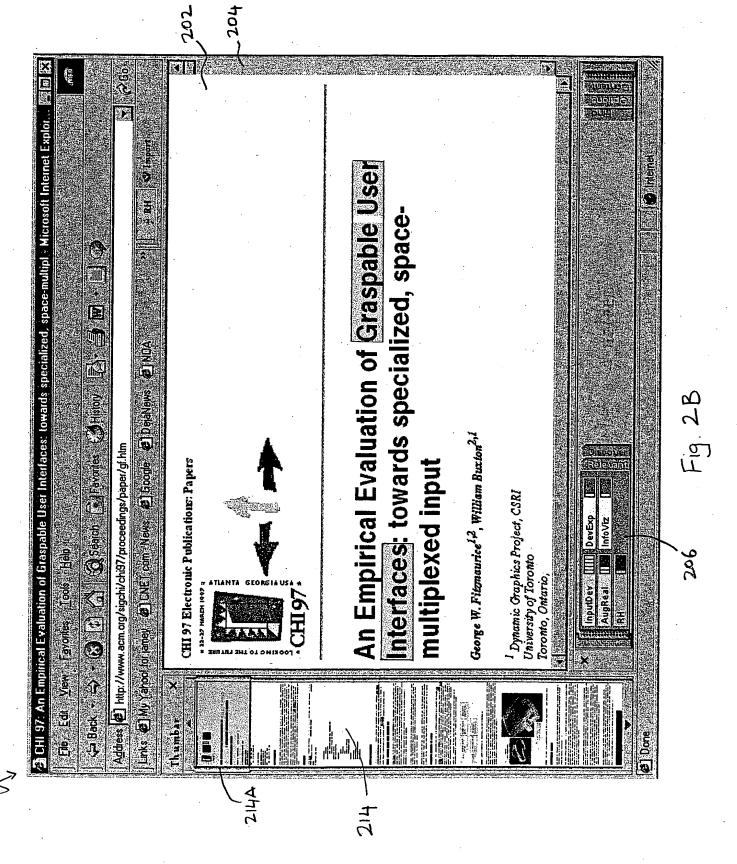


Fig. 1







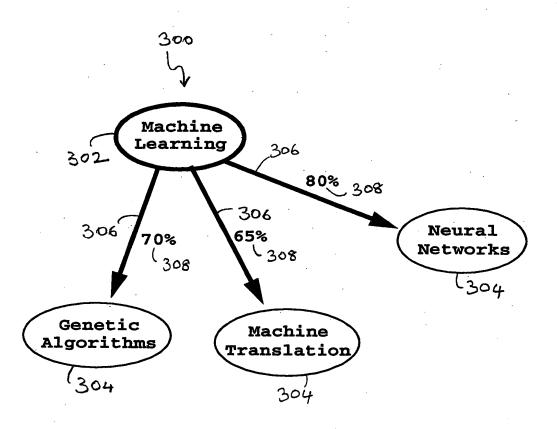


Fig. 3

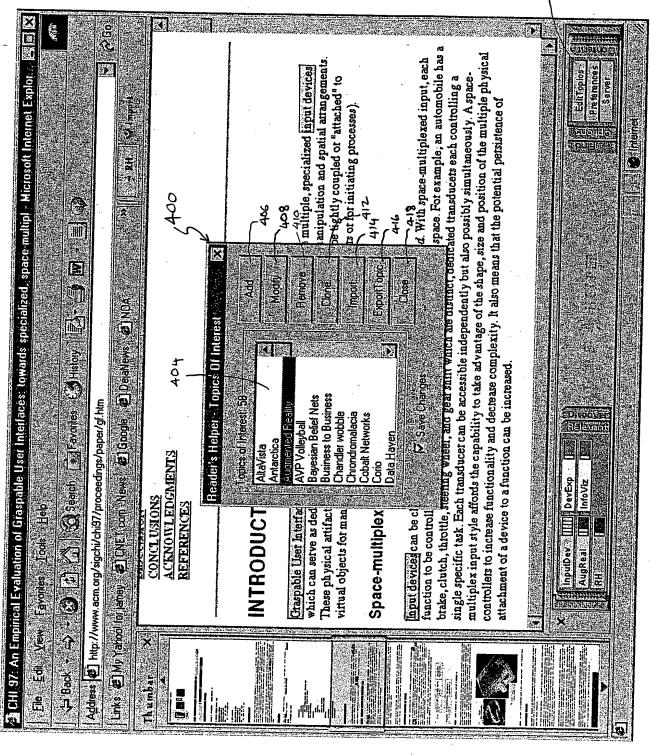


Fig. 4A

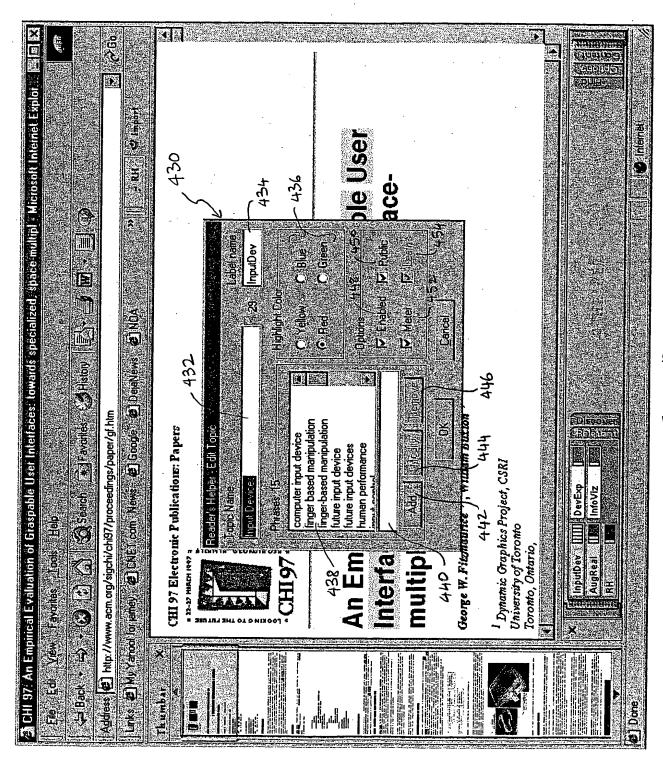


Fig. 4B

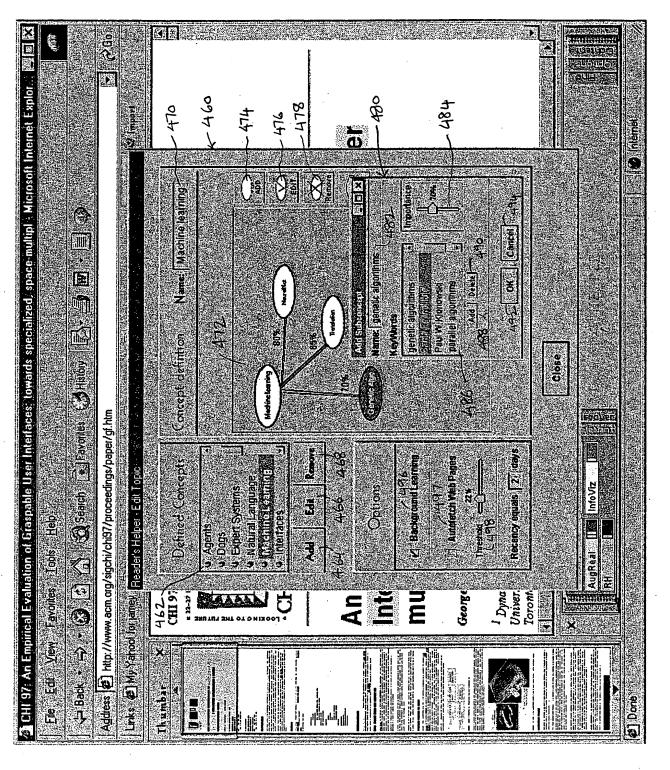


Fig. 40

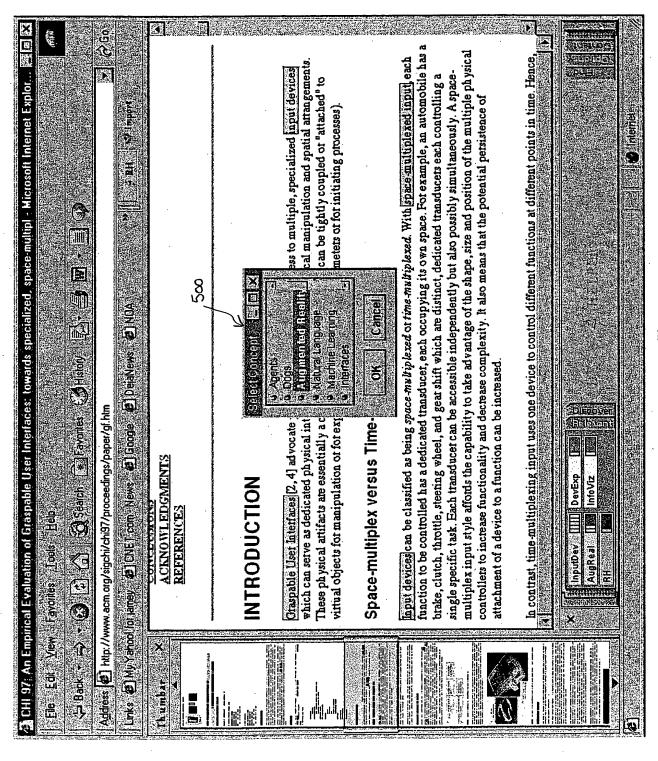


Fig. 5A

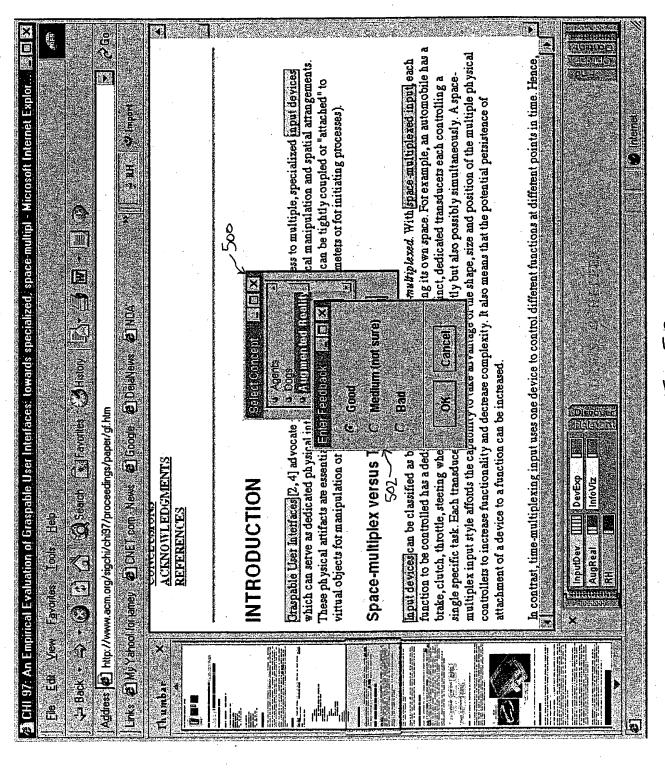


Fig. 5B

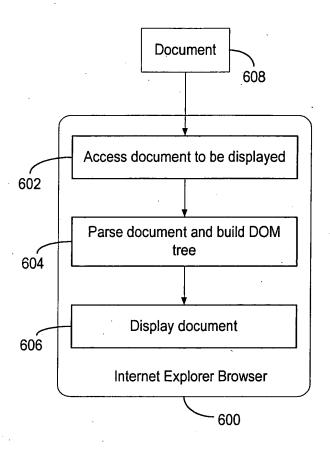


Fig. 6

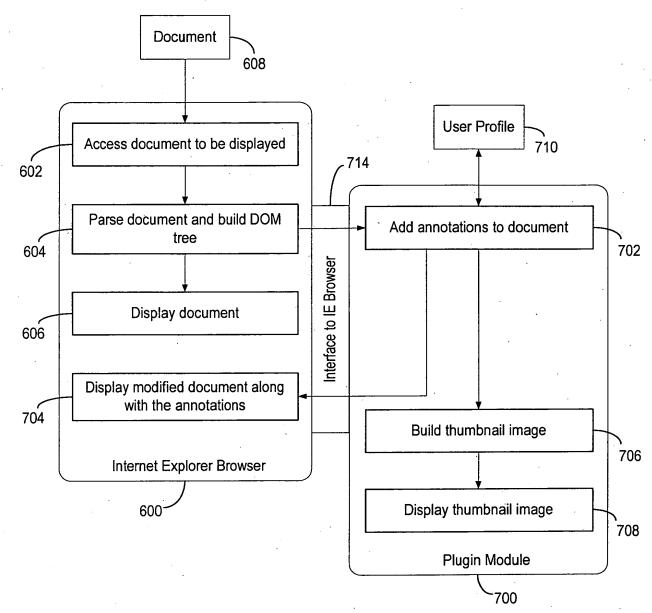


Fig. 7

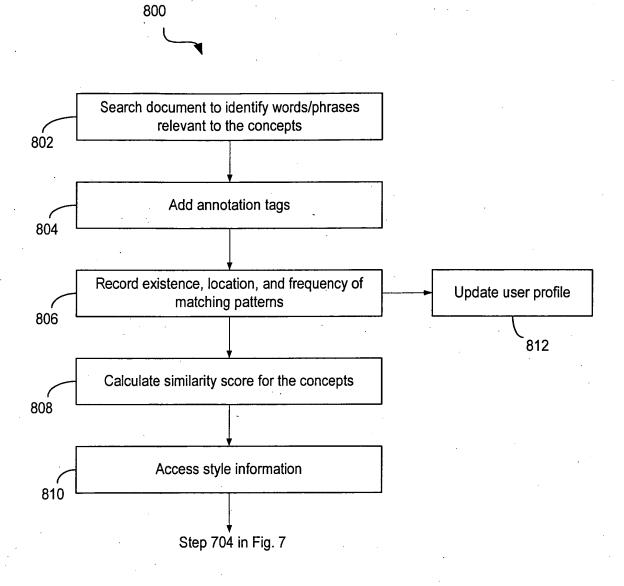


Fig. 8

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We have approached this challenge by introducing an intelligent agent that analyzes interactions between user and

expert system and
automatically constructs database queries based on this analysis. The user is
unobtrusively notified when information relevant to the current diagnostic
context has been returned, and may immediately access it if desired. From the
user's perspective all database machinery is entirely transparent; indeed no
formal query language is even made available. Hence we term this approach
query-free information retrieval.

As we hope will be apparent from what follows, the introduction of the SPAN class=rhtopic_18>intelligent/SPAN> SPAN class=rhtopic_18>intelligent/SPAN> SPAN class=rhtopic_18>agent/SPAN>
additionally offers one solution to a fundamental problem facing designers of cooperative information systems: How can legacy systems of substantial complexity be integrated within a larger system context? By requiring that all interactions with the legacy database be mediated by the agent, we have been able to isolate the database system cleanly while still supporting query-free information retrieval.

FIXIT is comprised of the three subsystems already mentioned: the probabilistic expert system, the legacy full-text database system (to which we added a new, semantically-based, indexing structure that supports limited natural language queries), and the intelligent intelligent agent that effectively integrates them. The following sections describe these system components, provide implementation details, illustrate the runtime behavior of FIXIT, report on operational experience, and close with some observations about query-free information retrieval and the potential for generalizing the underlying paradigm.

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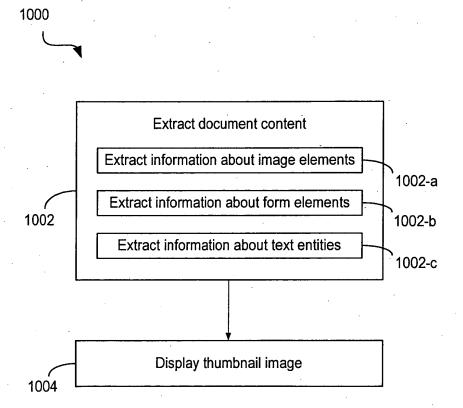


Fig. 10